



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,718	04/08/2002	Ian White	2490-14	7015

23117 7590 07/16/2003

NIXON & VANDERHYE, PC  
1100 N GLEBE ROAD  
8TH FLOOR  
ARLINGTON, VA 22201-4714

EXAMINER

KIM, ELLEN E

ART UNIT	PAPER NUMBER
----------	--------------

2874

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n N .

09/937,718

Applicant(s)

WHITE ET AL.

Examiner

Ellen E Kim

Art Unit

2874

-- The MAILING DATE f this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003 .
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 19-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-28 and 30-35 is/are rejected.
- 7) ☒ Claim(s) 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ .
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_ .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_ .

### **DETAILED ACTION**

This action is responsive to Applicant's amendment filed on 7/3/03.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 19-23, 25, 26, 28, 30, 31, 32, 33, and 35 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Baba et al ["A Novel Integrated-Twin-Guide Optical Switch with a Built-in TIR Region", Applicant's submitted prior art].

Baba et al disclose input waveguide [fig. 1 and 2], output waveguide, a first and second upper waveguide, and a corner mirror at the intersecting region. The Off switch state [without applying electric field] is discussed in the right column of the 1<sup>st</sup> page.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37

Art Unit: 2874

CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baba et al.

Baba et al disclose every aspect of claimed invention except for the intersection of an angle of substantially 90 degrees.

Baba et al, however, show the angle between the input port and the reference port is very close to 90 degrees in Fig. 1 and 2. Therefore it would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify Baba et al's device to have the intersection of an angle of substantially 90 degrees for the purpose of easier manufacturing process.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baba et al.

Baba et al disclose every aspect of claimed invention except for the first and second upper waveguides being not of the same thickness as the input and output waveguides respectively. Examiner notes that Applicant also claims in claim 10 that the first and second upper waveguides being of the same thickness as the input and output waveguides respectively, therefore, it is clear that the thickness is a matter of a design choice, and Applicant fails to establish any criticality of it. It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify Baba et al's device to have the first and second upper waveguides being not of the same thickness as the input and output waveguides respectively for the purpose of easier manufacturing process.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baba et al.

Baba et al disclose the claimed invention except for the array of switches. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device to include the array of switches, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

***Response to Arguments***

Applicant's arguments filed 7/3/03 have been fully considered but they are not persuasive.

Applicant argues that Baba does not disclose or suggest active waveguides, i.e., gain/loss of variation controlled by voltage and current. Applicant also argues that Baba fails to demonstrate simultaneous switching of both refractive index and gain/loss.

Examiner does not agree with Applicant's argument. First of all, Applicant fails to provide the definition of the "gain/loss" and "gain/loss of *what*" in the claim. Baba clearly shows the active waveguide such as MQW, and the refractive index of the MQW is controlled by electric field i.e., voltage and current [see the front page, right column, 1<sup>st</sup> paragraph]. Therefore, it is clear that Baba shows the active waveguides variation controlled by voltage and current. Examiner notes that since Baba shows all the claimed limitation such as the active waveguide, voltage and current, the gain/loss properties of the waveguides are inherently met by varying the electric field.

Art Unit: 2874

***Allowable Subject Matter***

Claim 29 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or suggest a switch comprising all the specific elements with the specific combination including the upper waveguides being not centered above the axis of the input and output waveguides respectively.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Further references of interest are cited on Form PLO-892, which is attachment to this office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen Kim whose telephone number is (703) 308-4946. The examiner can normally be reached on Monday and Thursday.

Ellen E. Kim  
Primary Examiner



July 11, 2003/EK